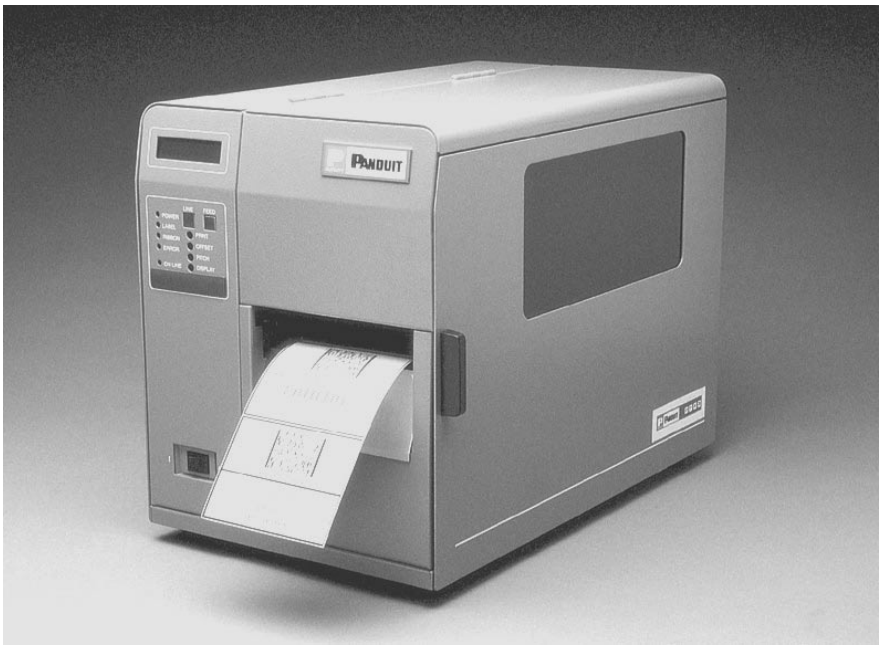
PTR3E
Thermal Transfer Printer



Operator and Technical Reference Manual

Panduit Corp.
Identification Products Division
1819 Atlanta Hwy.
Cumming, GA 30040-1069
Phone: 888-506-5400
Fax: 770-889-9264

This manual will guide you step by step in the set-up, operation, and troubleshooting of the PTR3E Printer. If you have problems not covered call Technical Support at 1-888-506-5400, ext. 7470.

SAFETY PRACTICES

The following general safety practices supplement the specific warnings and cautions elsewhere in this manual. They are recommended precautions that must be understood and applied during the operation and maintenance of the equipment covered herein.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE

Do not operate the product in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

DO NOT OPERATE IN WET OR DAMP AREAS

Do not operate the product in wet or damp areas. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT

Because of the danger of introducing additional hazards, do not install substitute parts or perform an unauthorized modification to the equipment. The proper components for service and repair may be obtained from Panduit Corp., Labeling Systems Department, 1-888-506-5400, ext. 7470. The product may also be returned for service and repair by calling the above number and requesting a Tracking Number. Please provide your company name, contact name, address, telephone number and serial number of the printer (and P.O. Number if out of warranty) when requesting the Tracking Number. After Tracking Number is received the printer should be returned to :

Panduit Corp.
1819 Atlanta Highway
Cumming, GA 30040-1069
Attention: Labeling Systems Repair Department

WARNING

When the printer has been in use for a long time, the print head may become hot. **DO NOT** touch the print head with bare hands.

INFORMATION TO USER

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARRANTY INFORMATION

Our products are warranted to be free from defects in material and workmanship at the time of sale but our obligation under this warranty is limited to the replacement of any product proved to be defective within 6 months (for product) or 90 days (for printers) from the date of delivery. Please remember to fill out the enclosed warranty card and return it to Panduit. Printer warranty is void if Panduit printers are modified, altered, or misused in any way. Use of Panduit printers with any product other than the specified Panduit products for which the printer was designed, constitutes misuse. Before using, user shall determine the suitability of the product for his intended use and user assumes all risk and liability whatsoever in connection therewith.

This warranty is made in lieu of and excludes all other warranties, expressed or implied. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE ARE SPECIFICALLY EXCLUDED. Neither seller nor manufacturer shall be liable for any injury, loss or damage, whether direct or consequential, arising out of the use of, or the inability to use the product.

The information contained in this literature is based on our experience to date and is believed to be reliable. It is intended as a guide for use by persons having technical skill at their own discretion and risk. We do not guarantee favorable results or assume any liability in connection with its use. Dimensions contained herein are for reference purposes only. For specific dimensional requirements consult the factory. This publication is not taken as a license to operate under, or a recommendation to infringe upon any existing patents. This supersedes and voids all previous literature, etc.

PREFACE

PTR3E OPERATOR MANUAL

The PTR3E Operator Manual contains basic information about the printer such as setup, installation, cleaning and maintenance. It also contains complete instructions on how to use the operator panel to configure the printer. The following is a brief description of each section in this manual.

SECTION 1. PRINTER OVERVIEW

This section contains a discussion of the printer specifications and optional features.

SECTION 2. INSTALLATION

This section contains instructions on how to unpack and set up the printer, load the labels and ribbon.

SECTION 3. CONFIGURATION

This section contains instructions on how to configure the printer using the DIP switches and the LCD / Menu / Control Panel.

SECTION 4. CLEANING AND MAINTENANCE

This section contains instructions on how to clean and maintain the printer.

SECTION 5. INTERFACE SPECIFICATIONS

This section contains the printer's interface specifications.

SECTION 6. TROUBLESHOOTING

This section contains troubleshooting procedures to follow in the event you have printer problems.

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SECTION 5. INTERFACE SPECIFICATIONS

SECTION 6. TROUBLESHOOTING

SECTION 1.
PRINTER OVERVIEW

INTRODUCTION

The Panduit PTR3E Thermal Transfer Printer is a complete, high-performance on-site labeling system. All printer parameters are user programmable using the front panel controls and the DIP switches. All popular bar codes and 14 human-readable fonts, including a vector font and two raster fonts, reside in memory providing literally thousands of type styles and sizes.

The Operator Manual will help you understand the basic operations of the printer such as setup, installation, configuration, cleaning and maintenance.

The PTR3E has a resolution of 203 dpi and can print labels up to four inches wide.

The following general information is presented in this section:

- General Printer Specifications
- Character Fonts
- Bar Codes
- Physical Specifications

GENERAL PRINTER SPECIFICATIONS

SPECIFICATION	PTR3E
PRINT	
Method	Direct or Thermal Transfer
Speed (User Selectable)	2 to 10 ips 50 to 250 mm/s
Print Module (Dot Size)	.0049 in. .125 mm
Resolution	203 dpi 8 dpmm
Maximum Print Width	4.1 in. 104 mm
Maximum Print Length	49.2 in. 1249 mm
MEDIA	
Minimum Width	.87 in. (22 mm)
Minimum Length	.63 in. (16 mm)
Maximum Width	5.0 in. (128 mm)
Type	Die Cut Labels, Fan-Fold or Continuous
Maximum Caliper	.010 in. (.25 mm)
Roll OD (max)	8.6 in. (218 mm), Face-Out Wind
Core ID (min)	1.5 in. (38 mm)
Core ID (Recommended)	3 in. (76 mm)
SENSING	
See-Thru for labels	Movable
Reflective Eye-Mark	Movable
Continuous Form	Sensor not used
RIBBON	
Maximum Width	4.4 in. (111 mm)
Maximum Length	1475 ft. (450 m)
Thickness	4.5 micron, Ink-In Wind

All specifications subject to change without notice.

SPECIFICATION	PTR3E
CONTROLS AND SIGNALS	
On-Line	Green LED
Power	Green LED
Label	Red LED
Ribbon	Red LED
Error	Red LED
LCD Panel	2 Line x 16 Character
On/Off-Line Switch	Front Panel
Label Feed Switch	Front Panel
Power On/Off Switch	Front Panel
POTENTIOMETER ADJUSTMENTS	
Print Darkness	Front Panel
Pitch	Front Panel
Offset	Front Panel
Display	Front Panel
INTERFACE CONNECTIONS	
Parallel*	IEEE1284 Compatible Standard
Serial	RS232C (9600 to 57600 bps) Standard RS422/485 (9600 to 57600 bps) Optional
Serial Protocol	Hardware Flow Control (Ready/Busy) Software Flow Control (X-On/X-Off) Bi-directional Status
Data Transmission	ASCII Format
PROCESSING	
CPU	32 Bit RISC
Flash ROM	2 MB
SDRAM	16 MB
Receive Buffer	2.95 MB

All specifications subject to change without notice.

** PTR3E comes standard with parallel port. Contact factory if serial port is required.*

CHARACTER FONTS

SPECIFICATION	PTR3E
MATRIX FONTS	
U Font	(5 dots W x 9 dots H)
S Font	(8 dots W x 15 dots H)
M Font	(13 dots W x 20 dots H)
XU Font	(5 dots W x 9 dots H) Helvetica
XS Font	(17 dots W x 17 dots H) Univers Condensed Bold
XM Font	(24 dots W x 24 dots H) Univers Condensed Bold
OA Font	(15 dots W x 22 dots H) OCR-A
OB Font	(20 dots W x 24 dots H) OCR-B
AUTO SMOOTHING FONTS	
WB	WB Font (18 dots W x 30 dots H)
WL	WL Font (28 dot W x 52 dots H)
XB	XB Font (48 dots W x 48 dots H) Univers Condensed Bold
XL	XL Font (48 dot W x 48 dots H) Sans Serif
VECTOR FONT	
	Proportional or Fixed Spacing Font Size 50 x 50 dots to 999 x 999 dots Helvetica, 10 Font Variations
AGFA® RASTER FONTS	
Font A	CG Times, 8 to 72 pt
Font B	CG Triumvirate, 8 to 72 pt
DOWNLOADABLE FONTS	
	Bit Mapped TrueType® Fonts with Utility Program
CHARACTER CONTROL	
	Expansion up to 12X in either the X or Y coordinates Character Pitch control Line Space control Journal Print facility 0°, 90°, 180° and 270° Rotation

All specifications subject to change without notice.

BAR CODES

SPECIFICATION	PTR3E
SYMBOLOGIES	
	Bookland (UPC/EAN Supplemental) EAN-8, EAN-13 CODABAR Code 39 Code 93 Code 128 Interleaved 2 of 5 Industrial 2 of 5 Matrix 2 of 5 MSI POSTNET UCC/EAN-128 UPC-A and UPC-E Data Matrix Maxicode PDF417 Micro PDF Truncated PDF QR Code
Ratios	1:2, 1:3, 2:5 User definable bar widths
Bar Height	4 to 600 dots, User programmable
Rotation	0°, 90°, 180° and 270°
OTHER FEATURES	
Sequential Numbering	Sequential numbering of both numerics and bar codes
Custom Characters	RAM storage for special characters
Graphics	Full dot addressable graphics, .BMP or .PCX formats
Form Overlay	Form overlay for high-speed editing of complex formats.

All specifications subject to change without notice.

PHYSICAL

SPECIFICATION	PTR3E
DIMENSIONS	
Wide	10.4 in. (265 mm)
Deep	17.1 in. (435 mm)
High	13.4 in. (341 mm)
WEIGHT	39.6 lbs (18 Kg)
POWER REQUIREMENTS	
Voltage	100 - 115 V , ±10 % (Default Setting) 220V , ±10 % 50/60 Hz, ±1%
Power Consumption	50W Idle 130W Operating
ENVIRONMENTAL	
Operating Temperature	41° to 104°F (5° to 40°C)
Storage Temperature	-0° to 104°F (-20° to 40°C)
Operating Humidity	15-85 % RH, non-condensing
Storage Humidity	Max 90% RH, non-condensing
Electrostatic Discharge	8KV
REGULATORY APPROVALS	
Safety	UL, CSA, TUV, CE
RFI/EMI	FCC Class A

All specifications subject to change without notice.

SECTION 2.
INSTALLATION

INTRODUCTION

This section will assist you in taking the PTR3E from the shipping container to the application environment.

The following information is provided in this section:

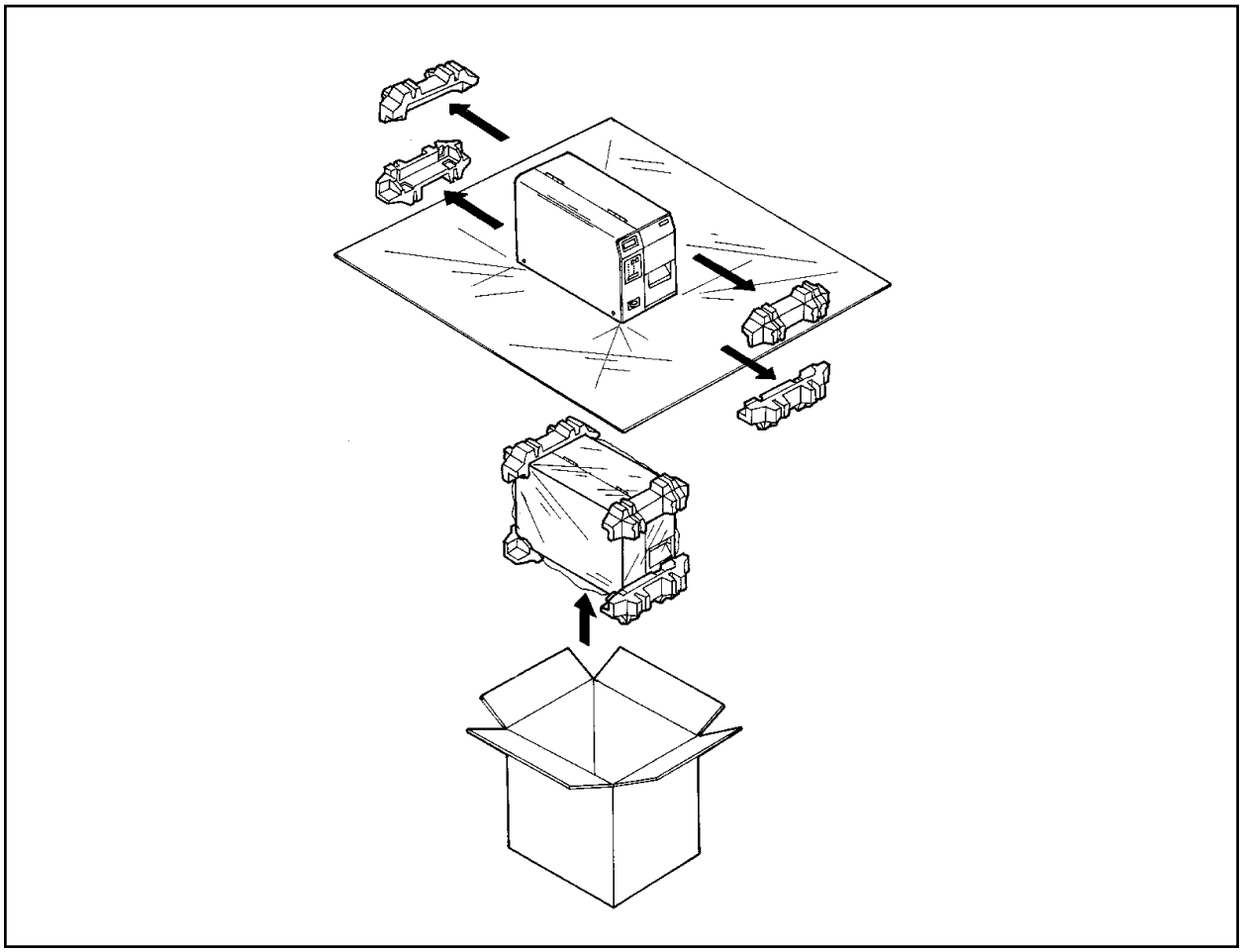
- Unpacking and Parts Identification
- Setting Up the Printer
- Loading Labels
- Loading the Ribbon
- Operator Panel
- Rear Panel
- Switches and Sensors
- Label Sensor Adjustment

UNPACKING AND PARTS IDENTIFICATION

Consider the following when unpacking the printer:

- The box should stay right-side up.
- Lift the printer out of the box carefully.
- Remove the plastic covering from the printer.
- Remove the accessory items from their protective containers.
- If the printer has been stored in a cold environment, allow it to reach room temperature before powering it on.
- Set the printer on a solid, flat surface. Inspect the shipping container and printer for any signs of damage that may have occurred during shipping.

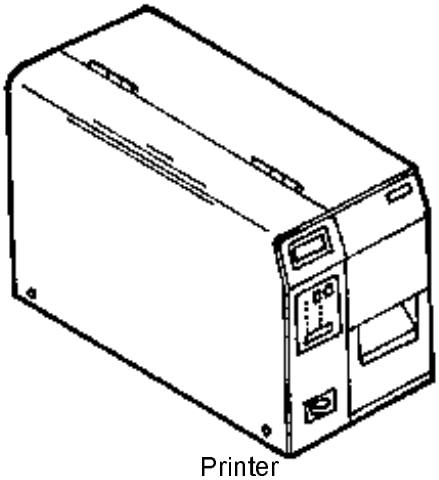
NOTE: The following illustrations are representative only. Your printer may not be packed exactly as shown here, but the unpacking steps are similar.



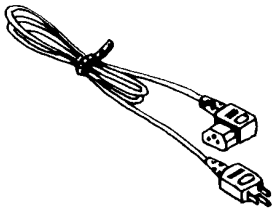
PTR3E Packing

Verify that you have the following materials when unpacking:

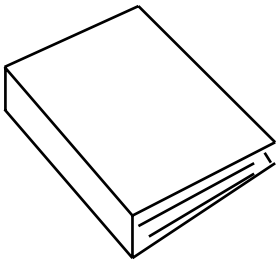
- Printer
- Power Cord
- Extra Ribbon Core
- Operator and Technical Reference Manual



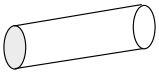
Printer



Power Cord



Operator Manual

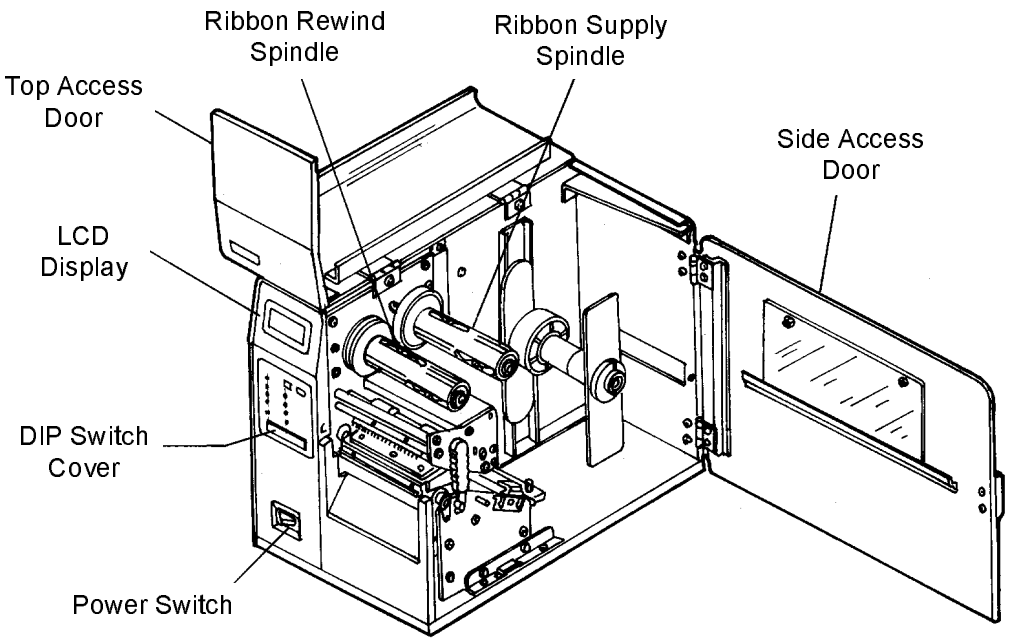


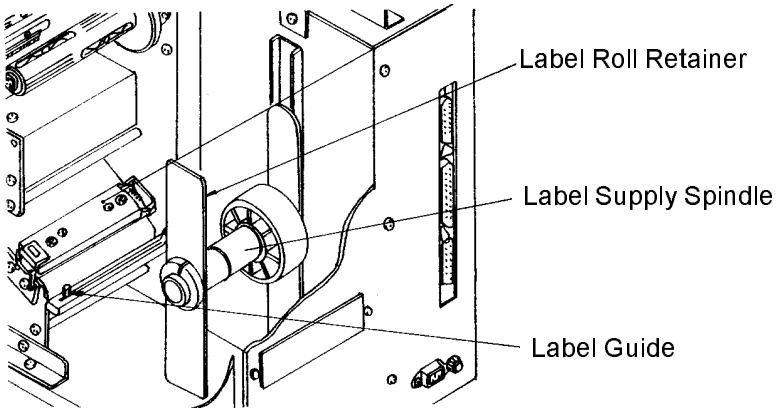
Extra Ribbon Core

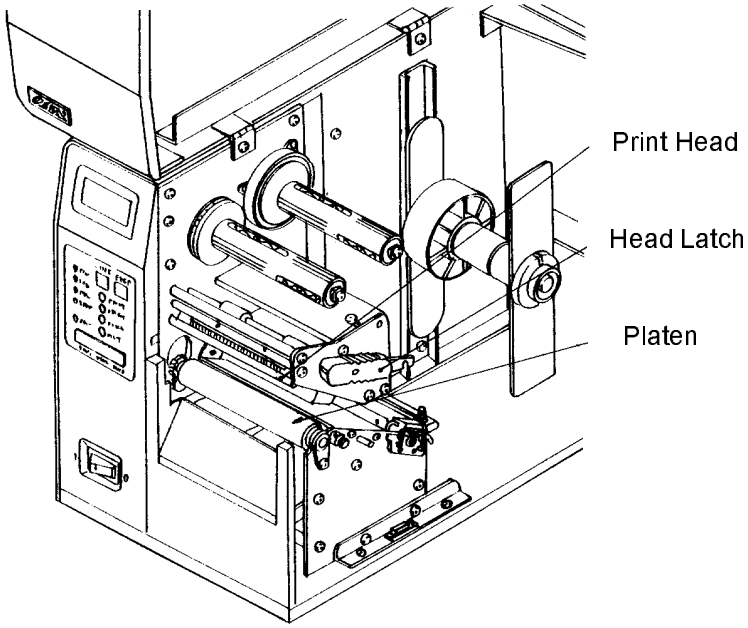
SETTING UP THE PRINTER

Consider the following when setting up the printer:

- Locate a solid flat surface with adequate room to set the printer. Make sure there is enough room at the top and right-hand (facing the printer) side to provide clearance for the label access door to swing open.
- The location should be near the host computer or terminal. The maximum distance for RS232 cables is 35 feet and six feet for IEEE1284 Parallel cables. Cables can be purchased locally, and their configuration will depend upon the host system being used. An IEEE1284 compliant cable must be used to realize the full throughput potential of the printer.


Ribbon Rewind Spindle
Ribbon Supply Spindle
Top Access Door
Side Access Door
LCD Display
DIP Switch Cover
Power Switch

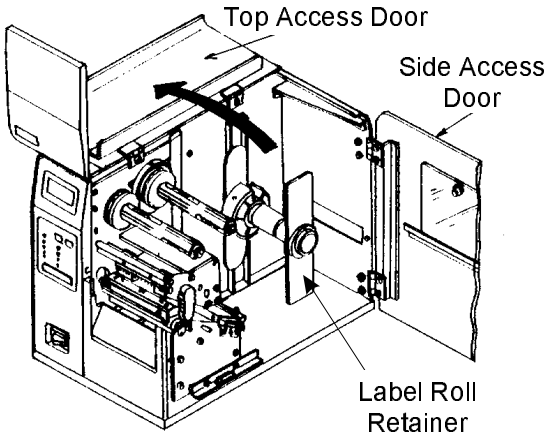

Label Roll Retainer
Label Supply Spindle
Label Guide


Print Head
Head Latch
Platen

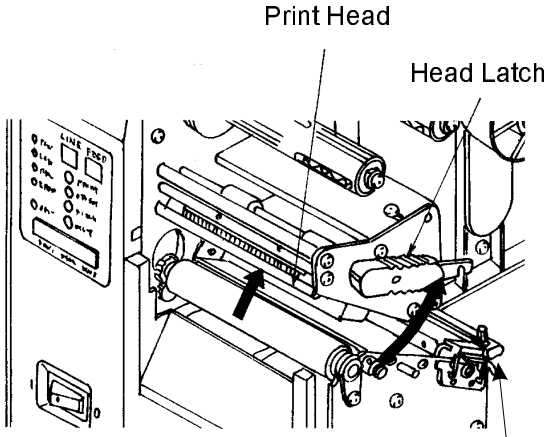
LOADING LABELS

Follow these steps to properly load labels into the PTR3E:

1. Open the **Top Access Door** by swinging it up and to the left. Open the **Side Access Door** by swinging it to the rear of the printer.

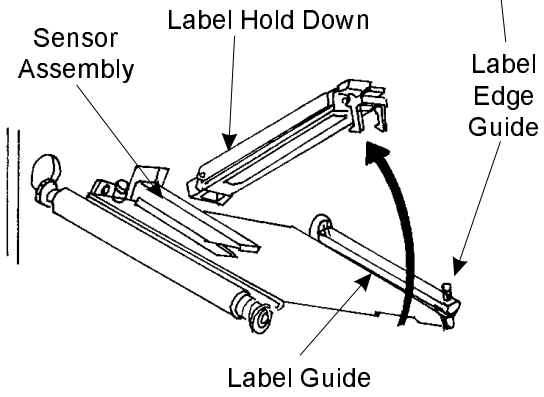


2. Open the **Print Head Assembly** by pushing the **Head Latch** toward the rear of the printer. The **Print Head Assembly** is spring-loaded and will automatically open as soon as the **Head Latch** is disengaged.



3. Loosen the **Label Edge Guide** and push it to the outside of the printer to give the maximum label width.

4. Remove the **Label Roll Retainer**.

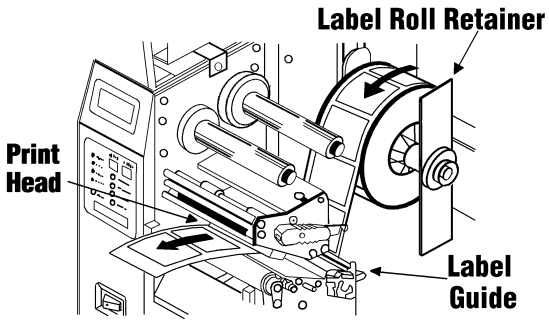


5. If using roll labels (or tags), load the roll onto the **Label Supply Spindle** so that the printing side of the labels faces upwards as it unwinds from the roll. Push the roll all the way to the inside of the printer and push the **Label Roll Retainer** snugly against the outside of the label roll.

6. If using fanfold labels set them on a flat surface behind the printer. Pass the labels (printing side up) through the slot in the rear of the printer.

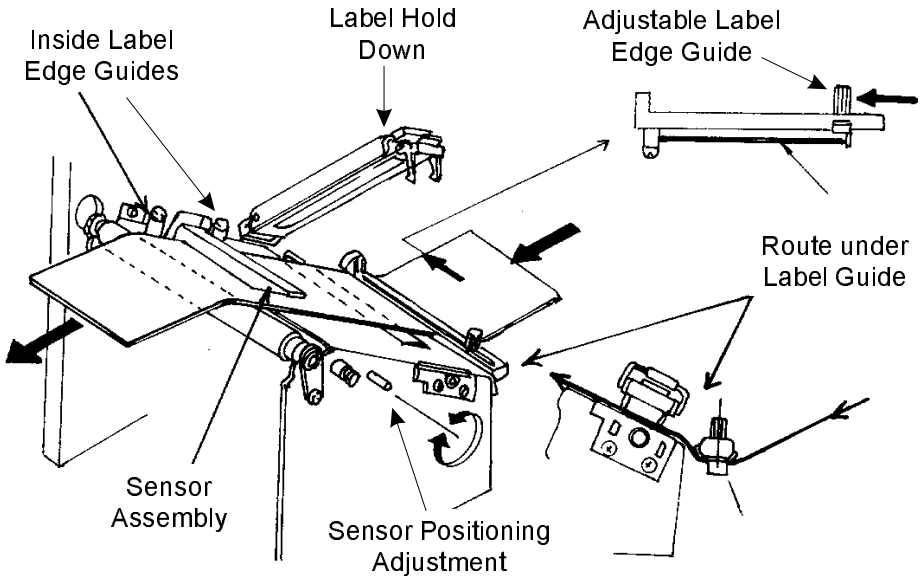
7. Make sure the labels are routed under the **Label Guide** and through the **Sensor Assembly**.

8. Open the **Label Hold-Down** by squeezing the green tab and the release tab together. The **Label Hold Down** is spring loaded and will open automatically when the latch is disengaged. Feed the labels under the **Label Guide**, under the **Label Hold Down**, through the **Sensor Assembly** and out the front of the printer.



9. Inspect the label routing and verify that the path matches that illustrated in the Label Loading diagram. Set the **Adjustable Label Guide** to keep the labels against the inside of the printer.

10. Close the **Label Hold-Down** by pushing downward on the green tab until it latches closed.



11. Adjust the outside **Label Edge Guide** until it touches the outside edge of the label and tighten the thumb screw. Make sure the labels are also touching the inside edge guides.

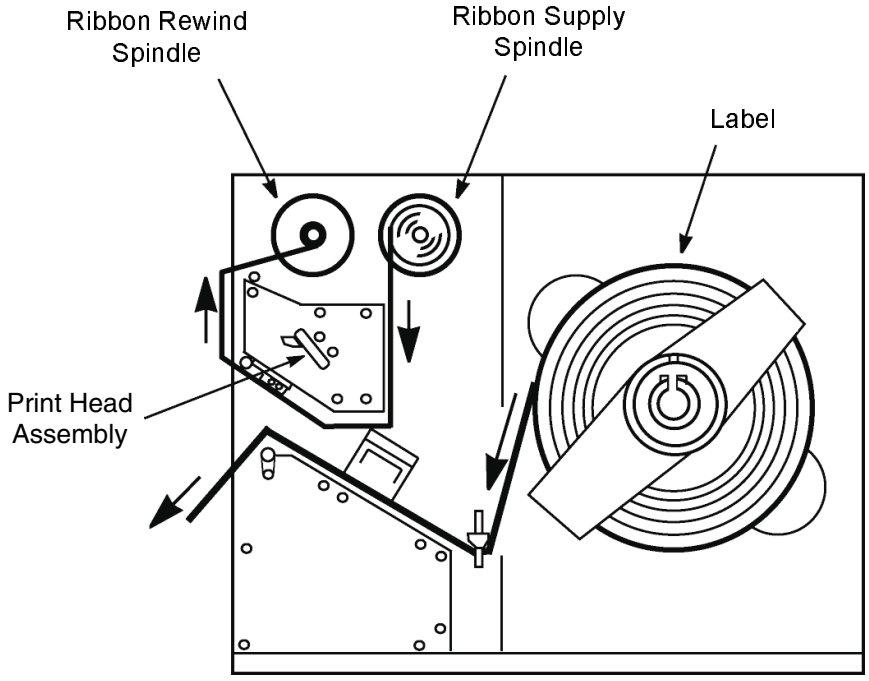
CAUTION: Using media narrower than the maximum print width may cause excess head wear due to the label edge. See page 15 for precautions.

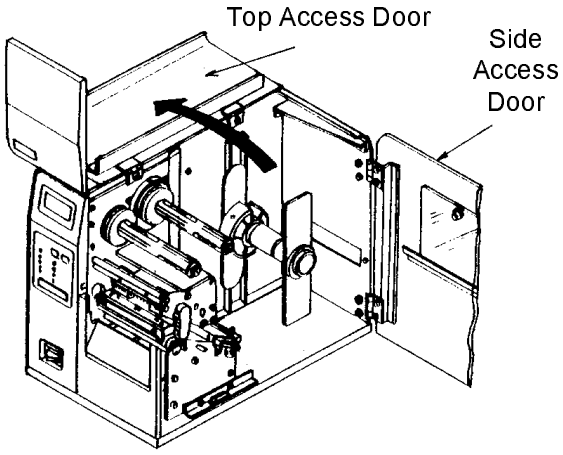
12. If the ribbon is already loaded, close the **Print Head** by rotating the black **Head Latch** toward the front of the printer until it latches closed.

13. If the ribbon is not loaded, see the following description for loading instructions.

14. Close both **Access Doors**.

LOADING THE RIBBON





1. Open the **Top Access Door** by swinging it up and to the left and the **Side Access Door** by swinging it toward the rear of the printer.

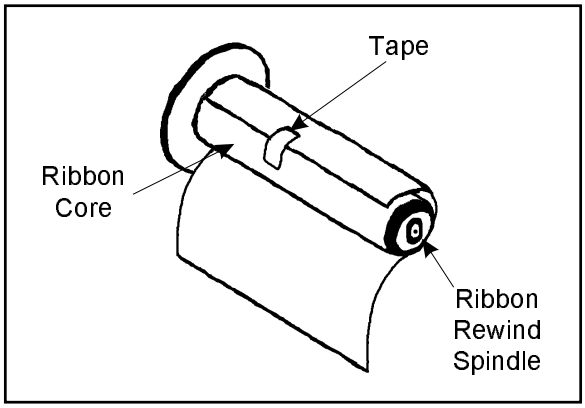
2. Open the **Print Head** by rotating the **Head Latch** toward the rear of the printer. The **Print Head** is spring-loaded and will automatically open as soon as the **Head Latch** is disengaged.

3. Locate the **Extra Ribbon Core** supplied with the printer. Place the core on the **Ribbon Rewind Spindle**, pushing it all the way to the inside of the spindle. *Note that the new empty core of each subsequent roll becomes the next rewind core.*

4. Load the ribbon onto the **Ribbon Supply Spindle**, also pushing it all the way to the inside of the spindle. The dull side of the ribbon should be facing down as it travels through the **Print Head Assembly**.

5. Feed the leader portion of the ribbon through the **Print Head Assembly** and up to the **Ribbon Rewind Spindle** following the routing shown in the diagram.

6. Load the ribbon behind and over the top of the **Ribbon Rewind Spindle** and tape it to the **Extra Ribbon Core**. Make sure it matches the ribbon path shown in the diagram.



7. Manually turn the **Rewind Spindle** to wrap the ribbon onto the core one to two turns to secure it.

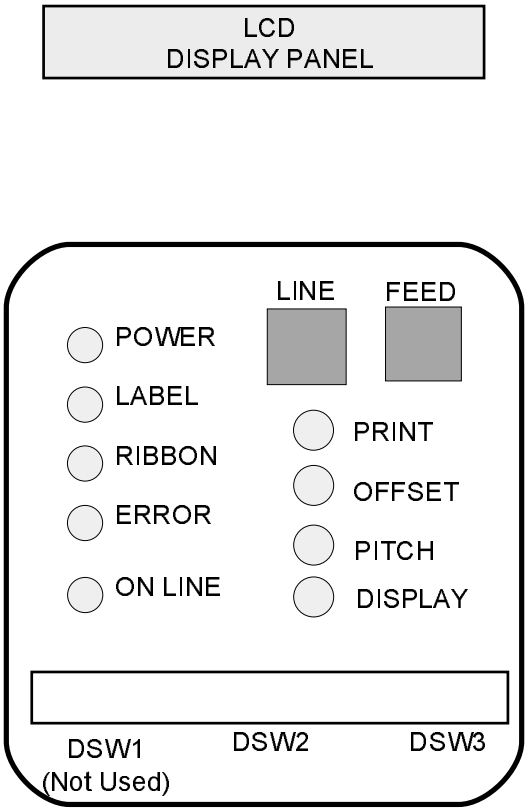
8. If the labels are already loaded, close the **Print Head Assembly** by pushing downward on the green tab until it latches closed.

NOTE: Run a test print to ensure that the labels and ribbons were loaded correctly. See the "Test Print Mode" section on page 34 for instructions on how to run test prints.

CAUTION: If your labels are less than the full width of the print head, the outside edge will eventually wear out a small portion of the print head, resulting in an area that will not print. Special care must be taken if you plan to use multiple widths of labels, since the damaged portion of the print head caused from edge wear on a more narrow label may affect the printing on a wider label. We suggest you plan your print formats carefully to avoid using the area of possible damage on the print head when using a wider label. The small area of damage will have no effect on printing with the undamaged part of the print head.

Damage from a label edge is physical damage and is unavoidable. It is not covered by warranty. It is possible to delay such damage by always ensuring that the ribbon used is wider than the label stock. This will help to protect the print head from label edge damage.

OPERATOR PANEL



The **PTR3E Operator Panel** consists of five LED indicators, two momentary contact switches, two DIP switches, four adjustment potentiometers and one LCD Display. All of these are accessible from the front of the printer. They are used to set the printer operating parameters and to indicate the status of the printer to the operator. After you power on the printer, familiarize yourself with the keys and indicators as it will help you understand the configuration process.

PRINT: Potentiometer to adjust print darkness (fine tuning).

OFFSET: Potentiometer to adjust amount of back/forward feed for dispenser/cutter/tear-off bar position (+/-3.75 mm)

PITCH: Potentiometer to adjust home position of the label (+/- 3.75 mm). Affects stop position of label feed, print position and dispense position.

DISPLAY: Potentiometer to adjust the contrast of the LCD.

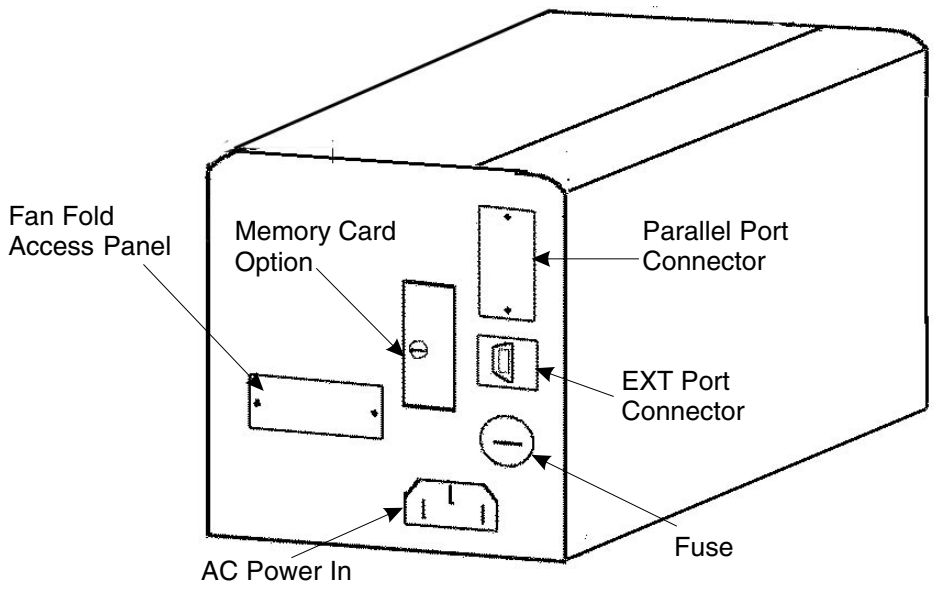
POWER: LED, illuminated when the power is on.

LABEL: LED, illuminated when label supply is out.

RIBBON:	LED, illuminated when ribbon motion sensor does not detect any ribbon motion (ribbon out).
ERROR:	LED, illuminated when there is a system fault such as an open print head.
ON LINE:	LED, illuminated when printer is ready to receive data. It is turned on and off by toggling the LINE key.
LINE:	Momentary switch. Pressing this key toggles the printer between the on-line and off-line mode. When the printer is on-line, it is ready to receive data from the host. This key acts as a pause during a print job by taking the printer off-line. It can also be used as a ***Pause*** function key to stop the printer during the printing process.
FEED:	Momentary switch. Pressing this key feeds one blank label through the printer when it is off-line. When the printer is on-line, another copy of the last label will be printed.
DSW:	DIP switch array to set operational parameters of the printer.
LCD:	2 Line x 16 Character LCD display. Used for setting operational parameters of the printer and displaying error conditions.

REAR PANEL

AC Input:	Input 115V 50/60 Hz connector. Use the cable provided.
AC Fuse:	Input power protection. Type 3A/250V.
Interface Slot:	Connector for Plug-In Interface Module
Memory Card Slot:	Connectors for optional PCMCIA Memory Cards. (Inside Side Cover)
EXT:	External signal connector, AMP 57-60140.
DC 5V:	Power for accessory items.



SWITCHES AND SENSORS

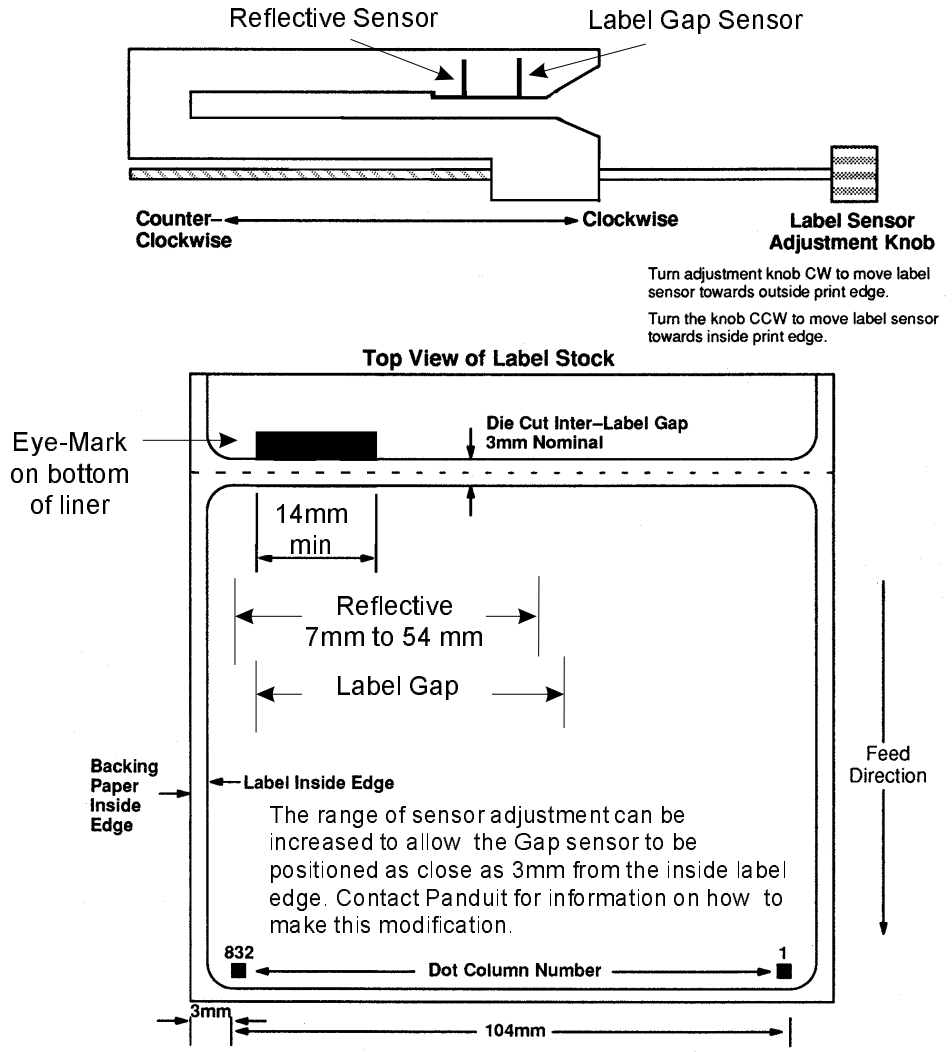
Ribbon End Sensor: This sensor is a motion detector that signals the printer when the ribbon supply is turning.

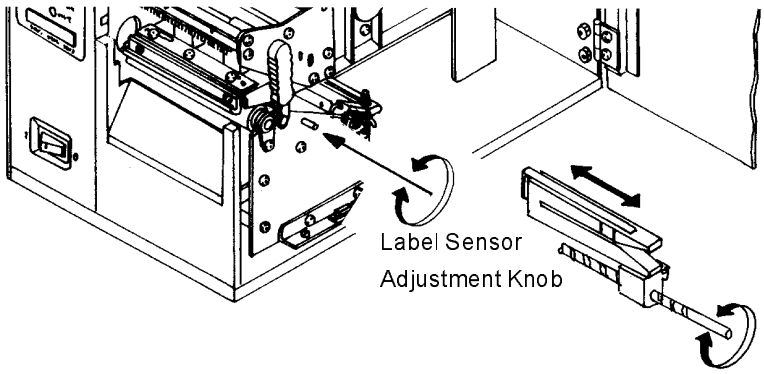
Head Open Switch: When the print head is opened, this switch is activated and the printer will stop printing.

Label Sensor Unit: This sensor unit contains two types of sensors, one for label gap and one for Eye-Mark sensing. The sensors are adjustable over a limited range.

LABEL SENSOR ADJUSTMENT

The Label Sensor Assembly can be positioned to match the location of the label registration hole/gap/edge. The diagram below illustrates the relative position of each sensor along the Label Sensor Unit and its range of movement. To position the sensors, use the adjustment knob located outside and below the print head assembly.





SECTION 3.
CONFIGURATION

PRINTER DIP SWITCH CONFIGURATION

DIP Switch Panels

There are two DIP switches (DSW2 and DSW3) located underneath a snap-on cover on the front panel. These switches can be used to set:

- Thermal transfer or direct thermal mode
- Label sensor enable/disable
- Head check mode
- Hex dump mode
- Single job or multi-job buffer
- Operation mode

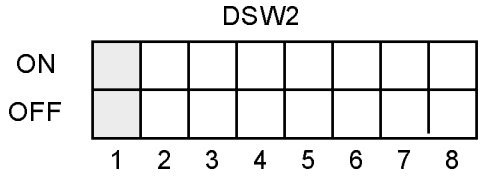
In addition, a third DIP switch is located on the RS232C Serial Adapter card and is used to set the RS232C transmit/receive parameters. (NOTE: Not factory standard)

Each switch is an eight section "toggle" switch. The ON position is always to the top. To set the switches, first power the unit OFF, then position the DIP switches. Finally, after placing the switches in the desired positions, power the printer back on. The switch settings are read by the printer electronics during the power up sequence. ***They will not become effective until the power is cycled.***

Printer Set Up

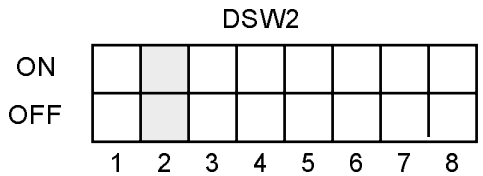
Print Mode Selection (DSW2-1). Selects between direct thermal printing on thermally sensitive paper and thermal transfer printing using a ribbon.

DSW2-1	SETTING
OFF	Therm Xfr
ON	Direct Therm



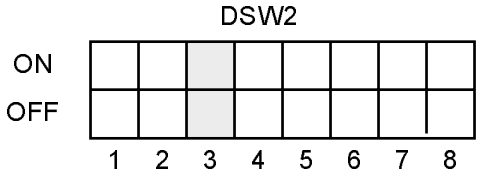
Sensor Type Selection (DSW2-2). Selects between the use of a label gap or a reflective Eye-Mark detector. See page 20 for the location of these sensors.

DSW2-2	SETTING
OFF	Gap
ON	Eye-Mark



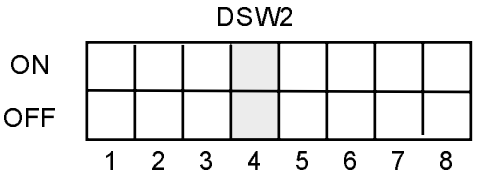
Head Check Selection (DSW2-3). When selected, the printer will check for head elements that are electrically malfunctioning.

DSW2-3	SETTING
OFF	Disabled
ON	Enabled



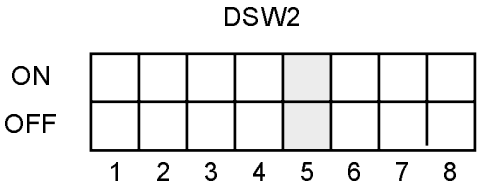
Hex Dump Selection (DSW2-4). Selects Hex Dump mode (see page 37).

DSW2-4	SETTING
OFF	Disabled
ON	Enabled



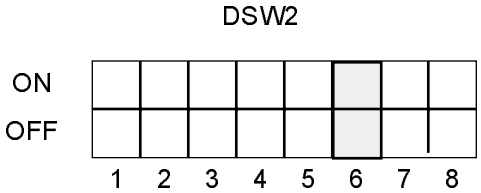
Receive Buffer Selection (DSW2-5). Selects the operating mode of the receive buffer. See Section 5: Interface Specifications for more information.

DSW2-5	SETTING
OFF	Single Job
ON	Multi Job



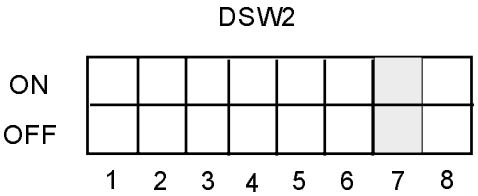
Firmware Download (DSW2-6). Places the printer in the Firmware Download mode for downloading new firmware into flash ROM.

DSW2-6	SETTING
OFF	Disabled
ON	Enabled



Protocol Code Selection (DSW2-7). Selects the command codes used for protocol control.

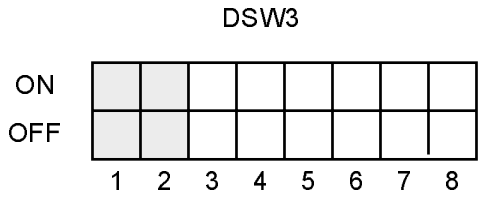
DSW2-7	SETTING
OFF	Standard
ON	Non-Std



Print Speed Adjustment (DSW2-8). See page 27.

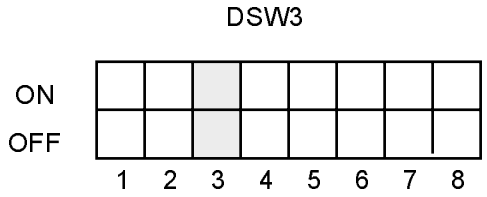
Mode Selection (DSW3-1 and DSW3-2). Selects the operating mode of the printer. Batch/Continuous disables the label taken (dispense option) sensor.

DSW3-1	DSW3-2	SETTING
OFF	OFF	Continuous
OFF	ON	Tear Off
ON	OFF	Cutter
ON	ON	Dispenser



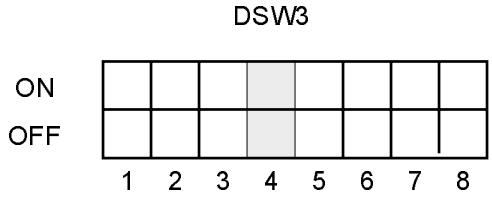
Label Sensor Selection (DSW3-3). Enables or disables the Label Pitch Sensor. If the Sensor is enabled, it will detect the edge of the label and position it automatically. If it is disabled, the positioning must be under software control using Line Feed commands for continuous media printing.

DSW3-3	SETTING
OFF	Sensor Used
ON	Not Used



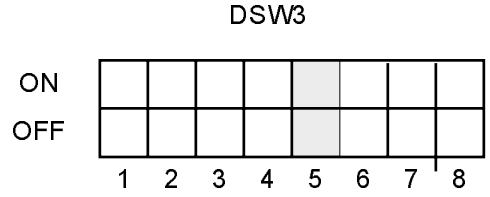
Back-Feed Selection (DSW3-4). When Back-Feed is enabled, the printer will position the label for dispensing/cutting and retract it before printing the next label. See page 38 for information on setting the amount of offset.

DSW3-4	SETTING
OFF	Enabled
ON	Disabled



EXT Print Start Signal Selection (DSW3-5). Allows an external device to initiate a label print.

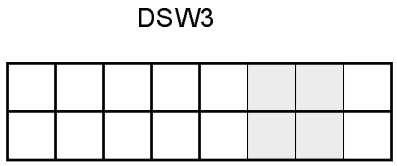
DSW3-5	SETTING
OFF	Disabled
ON	Enabled



Note: This switch must be in the ON position if an external device is used to control the printer via the EXT connector.

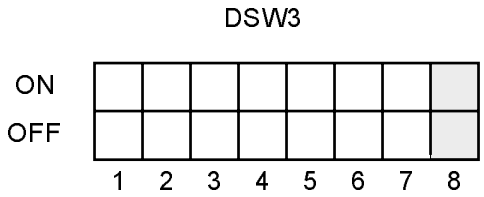
External Signal Type Selection (DSW3-6, DSW3-7). Selects the type of output signal.

DSW3-6	DSW3-7	SETTING
OFF	OFF	Type 4
OFF	ON	Type 3
ON	OFF	Type 2
ON	ON	Type 1



Repeat Print via External Signal (DSW3-8). Allows an external device to control the reprint of the label in the print buffer.

DSW3-8	SETTING
OFF	Disabled
ON	Enabled

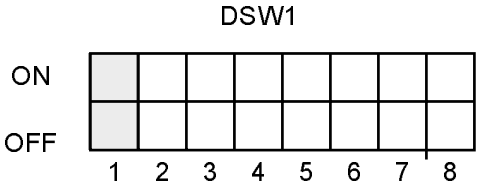


RS232 Transmit/Receive Setting (located on RS232C I/F Module)

The PTR3E comes standard with a parallel port only. Contact Product Management if serial port is required.

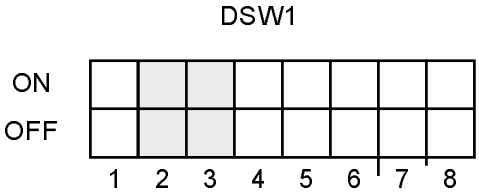
Data Bit Selection (DSW1-1). This switch sets the printer to receive either 7 or 8 bit data bits for each byte transmitted.

DSW1-1	SETTING
OFF	8 data bits
ON	7 data bits



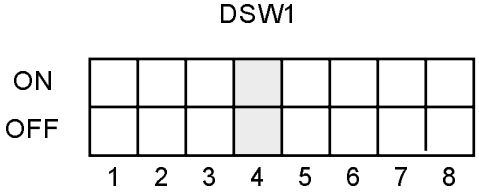
Parity Selection (DSW1-2, DSW1-3). These switches select the type of parity used for error detection.

DSW1-2	DSW1-3	SETTING
OFF	OFF	No Parity
OFF	ON	Even
ON	OFF	Odd
ON	ON	Not Used



Stop Bit Selection (DSW1-4). Selects the number of stop bits to end each byte transmission.

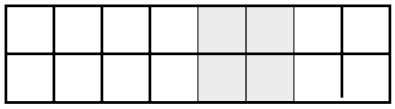
DSW1-4	SETTING
OFF	1 Stop Bit
ON	2 Stop Bits



Baud Rate Selection (DSW1-5, DSW1-6). Selects the data rate (bps) for the RS232 port.

DSW1-5	DSW1-6	SETTING
OFF	OFF	9600
OFF	ON	19200
ON	OFF	4800
ON	ON	2400

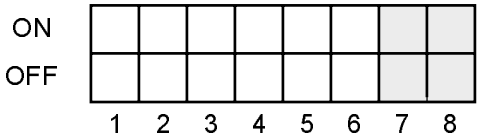
DSW1



Protocol Selection (DSW1-7, DSW1-8). Selects the flow control and status reporting protocols. See Section 4: Interface Specifications for more information.

DSW1-7	DSW1-8	SETTING
OFF	OFF	Rdy/Bsy
OFF	ON	Xon/Xoff
ON	OFF	Bi-Com
ON	ON	Not Used

DSW1



Default Settings

Switch Selections - All switches are placed in the OFF position (default) for shipping. This will result in the following operating configuration:

Communications: 8 data bits, no parity, 1 Stop bit, 9600 Baud *
Protocol: Ready/Busy
Sensor: Gap Sensor
Receive Buffer: Single Job
Mode: Batch/continuous
Label Sensor: Sensor Used
Backfeed: Disabled
External Signals: Disabled

* Only if RS232C I/F Module is installed

PRINTER ADJUSTMENTS

The LCD Panel on the PTR3E is used in conjunction with the **LINE** and **FEED** switches by the operator to manually enter printer configuration settings. Many of the settings can also be controlled via software commands and in the case of conflict between software and control panel settings, the printer will always use the last valid setting. If you load a label job that includes software settings and then enter a new setting via the LCD Panel, the manually set values will be used by the printer. If you set the values manually and then download a job with software settings, the software settings will be used.

MODE	KEY SEQUENCE	INITIAL DISPLAY	PAGE
Normal	POWER	ONLINE QTY: 000000	27
Advanced	LINE + POWER	ADVANCED MODE	29
Test Print	FEED + POWER	TEST PRINT MODE CONFIGURATION	33
Default Setting	LINE + FEED + POWER	DEFAULT SETTING YES NO	34
Clear Non-Standard Protocol	DSW2-7 ON + LINE + FEED + POWER	ALT. PROTOCOL COMPLETE	34
Protocol Code Download	DSW2-7 ON + POWER + LINE	USER DOWNLOAD PRESS THE LINE KEY	34
Hex Dump	DSW2-4 ON + POWER	ONLINE QTY: 000000	35

Normal Mode

The printer initially powers on in the ONLINE mode. The user can access the User Settings using the following procedures:

INITIALIZING **ROM V00.00.00**

Display lists the current ROM version of the printer during the initialization process.

ONLINE **QTY:000000**

The LCD will display the ONLINE status on the top line and the bottom line will contain the label quantity (QTY) status. The message will be changed to OFFLINE whenever the printer is switched offline by pressing the LINE key. As soon as a print job is received, the quantity line will indicated the number of labels to be printed. As the label job begins to print, the display will indicate the number of labels in the print job that remains to be printed.

OFFLINE **000000**

Press the LINE key once. When the display changes to OFFLINE, press the FEED and LINE keys simultaneously for more than one second.

PRINT DARKNESS **1 2 3 4 5**

The LCD now displays the Print Darkness selections. The current setting is indicated by an underline cursor under one of the range settings.

1. Press the LINE key to step the cursor to the desired setting.
2. Once the correct setting is underlined, press the FEED key to accept the selection and step the display to the next adjustment.

PRINT SPEED **2 4 6 8 10**

The print speed selections are dependent upon the printer setting of DSW2-8. The current setting is indicated by the underlined cursor.

1. Press the LINE key to step the cursor to the desired setting.
2. Once the correct setting is underlined, press the FEED key to accept the selection and step the display to the next adjustment.

DSW2-8 OFF	DSW2-8 ON
2 ips	2 ips
4 ips	4 ips
6 ips	6 ips
8 ips	8 ips
10 ips	10 ips

PITCH OFFSET
± 00mm

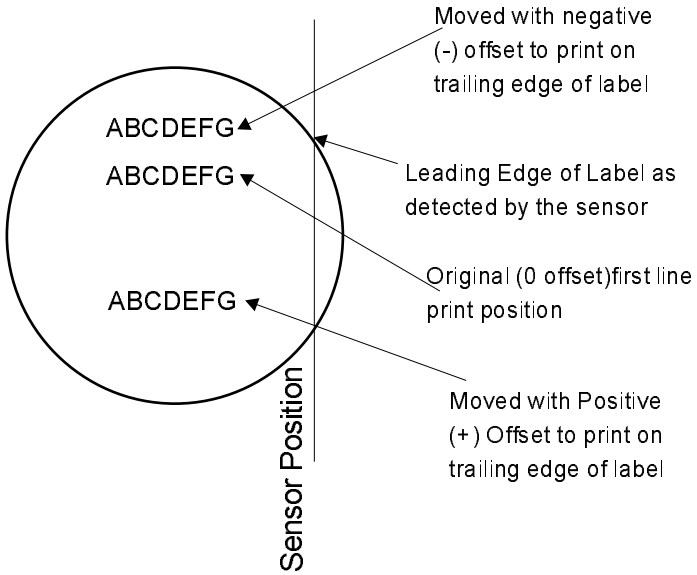
The label Pitch distance from the leading edge (the edge that comes out ofthe printer first) of a label and the leading edge of the next label. The leading edge position of the label can be adjusted relative to the print head +/- 49 mm in increments of 1mm. Once the position is set, it can be fine adjusted +/- 3.75mm using the PITCH potentiometer on the Adjustment Panel.

1. The underline cursor will initially be positioned underneath the Pitch Direction setting. Pressing the LINE key will step the setting to the positive (+) or negative (-) selection. A positive selection moves the leading edge of the label forward (away from the print head) while a negative selection moves the leading edge of the label back the mechanism.

2. Once the correct direction is selected, pressing the FEED key will accept the setting and advance the cursor to the Offset selection.

3. Use the LINE key to step the first digit of the counter to the desired setting. The display will increment one step each time the LINE key is pressed. The reading will advance to a setting of 4 after which it will automatically wrap and start at 0 again.

4. Press the FEED key to accept the setting and advance the cursor to the second digit. Again use the LINE key to step the desired setting. Once it is correct, pressing the FEED key will step to the next adjustment. You may wish to print a test label after completing the adjustments to ensure they are correct.



CANCEL PRINT JOB YES NO

If the printer has print job(s) in memory, selecting YES will cause the job(s) to be cleared. The default selection is number Be sure you want to cancel the print job(s) before selecting yes as the job(s) cannot be recovered and will have to be retransmitted to the printer.

1. Use the LINE key to step the underline cursor to either the YES or NO selection.
2. Once the correct setting is underlined, pressing the FEED key will accept the setting.
3. After the print job(s) have been cleared from memory, the printer will display a COMPLETED message for 3 seconds and then return to the initial ONLINE Normal Mode.
4. If you wish to change any of the settings, you must enter the User Settings mode again by taking the printer OFFLINE and pressing the LINE and FEED keys.

CANCEL PRINT JOB COMPLETED

ADVANCED MODE

An Advanced Mode is provided to make adjustments that require only occasional changes. Since they affect the basic operation of the printer, the procedure for entering this mode is designed to prevent someone from accidentally changing the settings.

INITIALIZING ROM V00.00.00.00

ADVANCED MODE

The Advanced Mode is entered by pressing the LINE key while simultaneously turning power on. The printer will emit one long beep after which the LINE key is released. Pressing the FEED key will step the display to the first selection.

ZERO SLASH YES NO

This setting determines if a zero is printed with a slash or without a slash. This setting can also be controlled via software commands. When YES is selected, the printer internal fonts will have a slash through the center of the zero character.

1. Use the LINE key to step the underline cursor to either the YES or NO selection.
2. Once the correct setting is underlined, pressing the FEED key will accept the setting and advance the display to the Auto Online display.

AUTO ONLINE YES NO

This setting determines the mode in which the printer powers up. If the YES selection is made, the printer powers up in the ON LINE mode and is ready to print. If NO is selected, the printer powers up in the OFF LINE mode and must be manually placed in the ON LINE mode by pressing the LINE key before it is ready to print.

1. Use the LINE key to step the underline to either the YES or NO selection.

2. Once the correct setting is underlined, pressing the FEED key will accept the setting and advance the display to the Print Offset display.

PRINT OFFSET
V:+0000 H:+000

Vertical Offset is the distance down from the leading edge (the edge of the label that comes out of the printer first) to the first vertical print position. A positive setting moves the first print position down the length of the label. Horizontal Offset is distance that the label image is shifted to the right or left on the label. The image is shifted to the left (towards the inside edge of the label for a right-hand printer) for a positive setting and it is shifted to the right (towards the outside edge of the label) for a negative setting. The setting changes the base reference point for all subsequent label jobs. It's effect is identical to the <ESC>A3 Base Reference point command. Since the printer moves the label in discrete steps equal to the size of the print dot, the units of measure for Vertical and Horizontal Offset distance is dots. The maximum values that can be set for each is +/-800.

1. Use the LINE key to step the first digit of the counter to the desired setting. The display will increment one step each time the LINE key is pressed.
2. Press the FEED key to accept the setting and advance the cursor to the second digit. Again use the LINE key to step to the desired setting. Once it is correct, pressing the FEED key will step to the next adjustment.
3. Once the setting is correct, pressing the FEED key will accept the setting and advance to the next display.

You may wish to print a test label after completing the adjustments to ensure they are correct.

Note: This setting can be overridden by the Base Reference Point Command

IGNORE CR/LF
YES NO

This selection tells the printer to strip out all carriage return/line feed repairs (CRLF) from the data stream, including graphics and 2D bar codes.

1. Use the LINE key to step the underline cursor to either the YES or NO selection.
2. Once the correct setting is underlined, pressing the FEED key will accept the setting and advance the display to the Character Pitch display.

CHARACTER PITCH
PROP FIXED

This selection allows you to set the default character pitch to either fixed character spacing or proportional character spacing.

1. Use the LINE key to step the underline cursor to the desired setting.
2. Once the correct setting is underlined, pressing the FEED key will accept the setting and advance the display. *Note: This command can be overridden by the <ESC>PR or <ESC>PS Character Pitch Commands.* To exit the Advanced mode, power the printer off and then back on.

ADVANCED MODE

SERVICE MODE

The Service Mode allows the operator to set up the basic operation parameters of the printer.

ADVANCED MODE

The service Mode is entered from the Advanced Mode display by pressing the LINE key twice.

SERVICE MODE

The Service Mode display indicates that the printer is in the Card Mode. To advance to the first selection, press the FEED key.

GAP [X.XV]
INPUT [X.XV]

The PTR3E printer determines the location of the leading edge of the label by measuring the differencebetween light levels when it sees either a label edge or a black "EYE" mark. The adjustment allows you to manually set the threshold voltage level, between the maximum and minimum light levels. DIP switch DSW2-2 selects the sensor type. If DSW2-2 is in the OFF position, the setting will be for a See-Thru (or Gap) sensor and the LCD will display "GAP" on the top line along with the current setting. If DSW2-2 is in the ON position, the LCD will display "EYE" on the top line with its current setting. If the value entered for the bottom line setting is "0.0V", then the printer will automatically calculate the setting when the first label is fed after the printer is powered on or the head is closed. There are some instances where the automatically calculated value must be adjusted to ensure reliable label feeding, such as when the backing opacity or the reflectance of the EYE mark varies significantly within a roll of labels or between label rolls. In these instances the value should be set using the following procedures.

AUTO ONLINE FEED
YES NO

This selection specifies whether or not the printer will automatically feed a blank label when it is placed in the Online mode.

1. Use the LINE key to step the cursor to desired setting. If Yes is selected, the printer will feed a blank label anytime it enters the Online mode. If No is selected, the display will advance to the mode display.

FEED ON ERROR
YES NO

This selection specifies whether or not the printer will feed a blank label automatically when an error condition is cleared...

1. Use the LINE key to step the cursor to desired setting. If Yes is selected, the printer will feed a blank label anytime an error condition is cleared. If No is selected, the display will advance to the mode display.

REPRINT W/FEED
YES NO

This selection specifies whether or not the printer will print the last printed label stored in memory when the FEED key is pressed in the Normal Online mode.

1. Use the LINE key to step the cursor to desired setting. If Yes is selected, the printer will reprint the last label when the FEED key is pressed when the printer is Online. If the printer is Offline, pressing the FEED key will feed a blank label. If No is selected, the display will advance to the mode display.

FORWARD/BACKFEED
DISTANCE DEFAULT

This display will only appear when the Backfeed is enabled (DSW3-4 = OFF).The maximum backfeed distance is 255mm.

1. Use the LINE key to select either the Default or the Distance selection. If Default is selected, the display steps to the Web acceleration selection.

FORWARD/BACKFEED
DISTANCE XXXmm

2. If Manual setting is selected, use the LINE key to advance the distance to the desired setting. Each time the LINE key is pressed, the Distance will advance 1 mm. The maximum distance is 255mm.
3. Once the desired distance is set, press the FEED key to accept the setting and step to the next display.

EURO CODE
D5

This selection allows the user to specify the hexidecimal code for the character which is replaced with the Euro Character. The default is $D5_H$.

1. The underline cursor should be positioned underneath the first digit selection. Use the LINE key to step to the desired setting.
2. Press the FEED key to advance the underline cursor to the second digit of the desired hexidecimal code.
3. Press the LINE key to step to the desired setting.
4. When the setting is correct, press the FEED key to accept the setting and step to the next display.

SELECT LANGUAGE
ENGLISH

This selection allows the user to select the character set used by the printer. The selections are English, French, German, Spanish Italian and Portuguese. The default is English.

1. Press the LINE key to advance to the desired language setting.
2. When the setting is correct, press the FEED key to accept the setting and step to the next display.

PRIORITY SETTING
COMMAND LCD

This selection allows the user to assign a priority for Print Darkness, Print Speed and Print Offset.

1. Use the LINE key to step to the desired priority. If LCD is selected, the setting established via the LCD display/menu system will be used for an incoming label job, regardless of any different command settings. If Command is selected, any commands in the label job will take precedence and be used for printing the job and the LCD Display will reflect the new setting.
2. Once the desired setting is selected, press the FEED key to accept the setting and step to the next display.

SERVICE MODE

The Service mode is exited by powering the printer off and then back on.

TEST PRINT MODE

The Test Print Mode offers five different printer status labels for troubleshooting. If DSW3-5 is On, the Test Print cycle must be initiated with a Print Start command.

INITIALIZING
ROM V00.00.00.00

This option allows you to print a test label. It is recommended that you print a test label after have changed any of the settings in the Advanced Mode. The test label allows you to verify that you indeed did make the desired changes. To enter the User Test Print Mode, power the printer on while pressing the FEED key. The printer will beep. Release the FEED key and the printer will display the Test Print Mode message on the LCD panel:

TEST PRINT MODE
CONFIGURATION

1. Use the LINE key to step the underline cursor to the type of test labels you wish to print. The choices are:
   - Configuration
   - Bar Code
   - Head Check
   - Memory
   - Factory

TEST PRINT SIZE
10 CM

Note: This display does not appear when a Memory Test Print is chosen. Only a small Memory Test Print label can be printed.

Once you have selected the type of test label to be printed, use the FEED key to accept the selection and the display advances to the Test Print Size display. This display allows you to select the label width.

1. Use the LINE key to select the label width. Each time the LINE key is pressed, the label size advances 1 cm until it reaches a maximum width of 10 cm, at which point it will wrap to the smallest size of 4 cm.
2. Pressing the LINE key accepts the selection
3. Press the FEED key to start printing test labels continuously.

PRESS FEED KEY
TO STOP PRINTING

4. Press the FEED key to stop the printer.
5. To exit the Test Print Mode, power the printer off and then back on.

DEFAULT SETTING MODE

Occasionally it is desirable to reset all printer configuration settings to their original default conditions. This allows the operator to start reconfiguration of the printer starting from a known set of conditions.

You enter the Default Setting Mode by pressing the LINE and FEED keys while simultaneously powering the printer on. The printer will emit one long beep after which the FEED and LINE keys should be released.

1. Use LINE key to select either the YES or number
2. Once the desired setting is selected, pressing the FEED key will accept the selection and the printer will reset to the original default conditions.

3. When the printer has completed the reset process, the Default Setting Completed display will appear. At this time the printer is in the default configuration.
4. To exit the Default Setting Mode, power the printer off and then back on.

CLEAR NON-STANDARD PROTOCOL

The standard protocol codes used by the printer can be modified to accommodate the requirements of different host systems. However, if the printer is to be used with a system that does not use the custom protocol codes, they can be cleared and the default protocol codes reactivated. The default values are: STX = 7B$_H$, ETX = 7D$_H$, ESC = 5E$_H$, ENQ = 40$_H$, NULL = 7E$_H$, CAN = 21$_H$, and OFFLINE = 5D$_H$.

To Clear Non-Standard protocol codes, DSW2-7 is placed in the OFF position and the printer powered on while simultaneously pressing the LINE and FEED keys. The printer will emit one long beep at which time the LINE and FEED keys should be released.

1. When the keys are released, the printer will replace the Alternate protocol codes with the default values.
2. After the default setting is complete, the printer will emit two short beeps indicating the process is complete.
3. To exit the mode, power the printer off and then back on.

DOWNLOAD USER DEFINED PROTOCOL CODES

The user can define a set of custom protocols codes and download them to the printer using the <ESC>LD command.

To enter the User Download mode, DSW2-7 is placed in the OFF position and the printer is powered on while simultaneously pressing the LINE key. The printer will emit one long beep after which the LINE key should be released.

1. Press the LINE key. The printer is now waiting for the data to be sent.
2. Transmit the download data command stream to the printer.

3. After the data has been received, the printer will beep and print a status label. If it does not beep and print a status label, the printer did not accept the data.

4. If the printer did not beep and print a status label, turn the printer off and check your data stream for errors and start the download process over.
5. If the custom codes are correct, press the FEED key to accept them and terminate the download process. If they are incorrect, turn the printer off without pressing the FEED key and begin the process again.

HEX DUMP MODE

In addition to the User Test Print Labels, the printer can print the contents of the receive buffer in a hexadecimal format to allow the data stream to be examined for errors and troubleshooting.

```
INITIALIZING
ROM V00.00.00.00
```

The Hex Dump Mode is entered by placing DSW2-4 in the ON position and powering the printer on.

1. The printer is now ready to receive data.
2. Send the data stream to the printer.
3. The received data will be printed in a hexadecimal format

```
ONLINE
        QTY:000000
```

4. To return the printer to normal operation, place DSW2-4 in the OFF position and power the printer off and then back on.

POTENTIOMETER ADJUSTMENTS

PITCH

After the pitch has been set with the LCD Control Panel, it is sometimes desirable to make minor adjustments. This can be done using the **PITCH** potentiometer on the front panel. This potentiometer is set at the factory so that it has a range of +/-3.75 mm. The midpoint setting should have no effect on the pitch. Turning the potentiometer all the way clockwise should move the print position 3.75 mm up towards the top edge of the label. Turning it all the way counter clockwise should move the print position down 3.75 mm.

1. While depressing the **FEED** key on the front panel, power the printer on.

2. When you hear one beep from the printer, release the **FEED** key and the printer will display on the LCD panel a message asking what type of Test Label you want to print.

3. Use the **LINE** key to step to the Configuration selection and press the **FEED** key to accept the selection.

4. Use the LINE key to select the Test Label size. After the size is selected, press the FEED key to accept the selection and the printer will begin to print test labels continuously.

5. Adjust the **PITCH** potentiometer on the front panel until the first print position is at the desired location on the label. If the potentiometer does not

have enough range, then you will have to change the pitch setting using the LCD front panel display.

6. Press the **FEED** key to stop the printer.

7. To exit the Test Label mode, power the printer off and then back on.

Adjusting the **PITCH** potentiometer will affect the stop position of the label.

BACKFEED OFFSET

When a label is printed it must be correctly positioned for dispensing and application. The Backfeed adjustment is used to position the label so that it is fully dispensed and ready for application. It may then be necessary to reposition the next label before printing. The Backfeed (repositioning of the label) operation is enabled if DSW3-4 is in the Off position. If backfeed is enabled, placing DSW3-1 in the Off position will cause the backfeed operationto be performed immediately before each label is printed. If DSW3-1 is in the On position, the backfeed operation is performed as soon as the dispensed label has been printed and taken from the printer.

The amount of backfeed is controlled by the **OFFSET** potentiometer on the DIP Switch Panel inside the cover. When turned all the way counterclockwise, the amount of backfeed is +3.75 mm, and -3.75 mm when turned all the way counterclockwise.

1. Turn the printer on.

2. Press the **LINE** key to place the printer in the Off Line status.

3. Press the **FEED** key to feed out a blank label.

4. Adjust the position using the **OFFSET** potentiometer on the front control panel and feed another label by depressing the **FEED** key. Repeat this procedure until the label is fully released from the liner.

DISPLAY

This potentiometer is used to adjust the contrast of the LCD display for optimum viewing under various lighting conditions.

PRINT

The PRINT potentiometer is used to adjust the amount of heat (i.e., power) applied to the head for printing. It provides a continuous range of adjustment. Maximum print darkness is obtained by turning the potentiometer all the way clockwise and a maximum counterclockwise setting will give the lightest print.

NOTE: The PRINT potentiometer adjustment will affect the darkness in all of the commend code speed and darkness ranges.

DISPLAY COUNTER VALUES

The internal counters are used to track the number of kilometers of media that has been processed through the printer, the number of labels cut and/or the number of label dispensed. These values can be used to track component life for service and maintenance functions. The current counter settings are displayed on the Factory/Service mode Test Label. To print the Factroy/Service Test Label, the following procedure must be used:

1. Turn the printer OFF and place **DSW2-4** in the ON position.

2. Open the print head by releasing the **Head Latch**.

3. While simultaneously pressing the **LINE** and **FEED** keys, turn the printer ON.

4. Close and latch the print head.

5. The LCD panel should read:

   MAINTENANCE MODE
   DIPSW2-4 ON->OFF

6. Place **DSW2-4** in the OFF position.

7. The LCD panel should indicate that the printer is in the FACTORY MODE.

   FACTORY MODE

8. Press the **FEED** key and the display will advance to the COUNTER CLEAR message screen. Make sure that the NONE selection is displayed on the bottom line. If it is not, press the **LINE** key once until ALL is displayed.

   COUNTER CLEAR
   NONE

9. Press the **FEED** key to initiate the Test Label print mode. Then press the **LINE** key to begin printing Test Labels. The printer will print Test Labels continuously until the **FEED** key is pressed again, which pauses the printer. Test Labels will again start printing as soon as the **FEED** key is pressed again.

WARNING: The Test Label is designed to print on a full width label. If smaller labels are used, the print head may be damaged if more than one label is printed.

10. The counter readings and ROM version are printed on the label along with other pertinent information.

11. Turn the unit OFF and reset the DIP switches to the proper operating positions before powering the printer back ON.

SECTION 4.
CLEANING AND MAINTENANCE

INTRODUCTION

This section provides information on user maintenance for the PTR3E. This section contains the following information.

- Adjusting the Print Quality
- Cleaning the Print Head, Platen and Rollers
- Cleaning the Sensors
- Replacing the Print Head
- Replacing the Fuse

PROCEDURES

ADJUSTING THE PRINT QUALITY

The PTR3E printer has two different means of adjusting the quality of the print: print darkness and speed. When adjusting the printer for optimum print quality, a bar code verifier system should be used. The human eye is a poor judge of the relative widths of the bars in a symbol, a characteristic that is extremely important for good bar code quality.

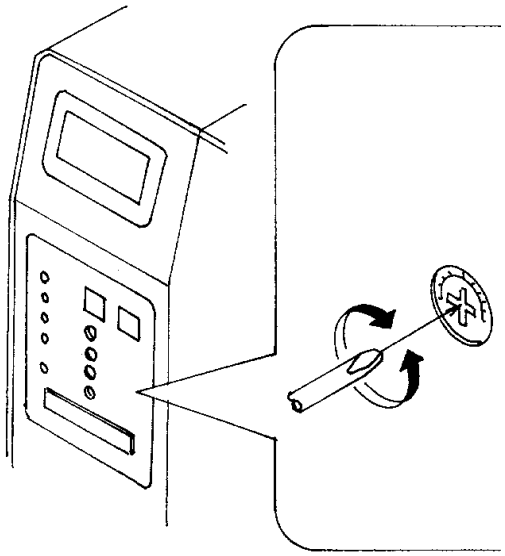
Darkness (Print)

This adjustment allows the user to control (within a specified range) the amount of power that is used to activate the individual print head heat elements. It is important to find a proper print darkness level based on your particular label and ribbon combination. The printed images should not be too light nor should the ink from the ribbon "bleed." The edges of each image should be crisp and well defined.

The Print Darkness range can be set using the front panel LCD panel (see page 26) or by downloading the setting using the Print Darkness software command. There are five ranges, with 1 being the lowest and 5 being the highest. Once the range has been selected, the **PRINT** Potentiometer on the front panel can be used to make finer adjustments.

Print Potentiometer

The fine adjustment for Print Darkness is the **PRINT** potentiometer on the operator panel. It provides a continuous range of adjustment, allowing you to make precise changes. Use a small cross-point screwdriver, turning clockwise for darker print and counterclockwise for lighter print.



*NOTE: The **PRINT** potentiometer adjustment will affect the darkness in all of the command code speed ranges, i.e. if the **PRINT** potentiometer is adjusted for lighter print, the darkness will be lighter in all speed ranges selected by the command code.*

Print Speed

The other method of controlling print quality is by controlling the speed at which the label is printed. This adjustment is made only on an individual label basis using either the Print Speed command code or the LCD display panel. Changing the print speed allows the user to control the amount of time allowed for print element cooling before the media is stepped to the next print position. It is especially critical when printing "ladder" bar codes (bar codes printed with the bars parallel to the print line). When printing a "ladder" bar code, it is important to allow the head to cool sufficiently before stepping to the next position. If it does not have sufficient time to cool, the bar will be "smeared" on the trailing edge.

The Print Speed can be set to 2, 4, 6, 8 or 9 inches per second (with DSW2-8 OFF) or 2, 4, 6, 8 or 10 inches per second (DSW2-8 ON) using the LCD panel (see page 26) or using software. The software command will override the any setting entered using the LCD panel.

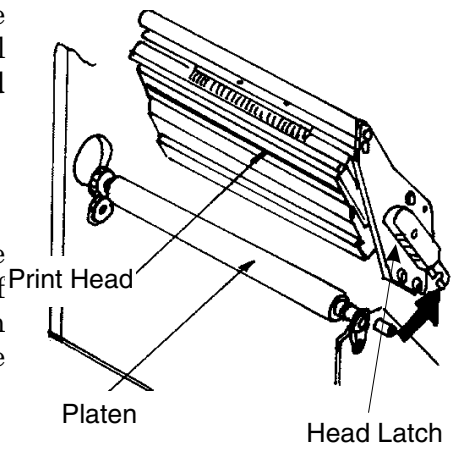
CLEANING THE PRINT HEAD, PLATEN AND ROLLERS

Supplies Needed: PTR-CLN printer cleaning kit

Includes: 4 oz. (116 ml) bottle cleaning solution with MSDS, cleaning pens, 100 swabs, 12 alcohol wipes and instructions

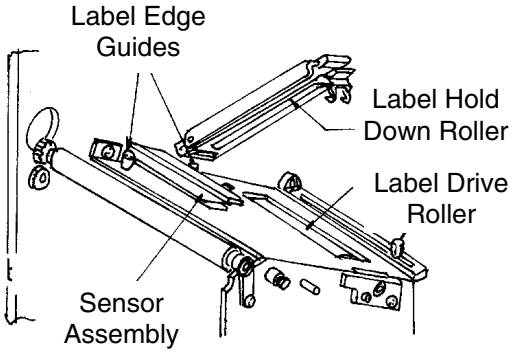
Cleaning the Print Head and Platen

1. Turn the printer OFF and remove the power cable.
2. Open the **Top Access** and **Side Access** doors.
3. Open the **Print Head** by pushing the **Head Latch** toward the rear of the printer. The **Print Head** is spring-loaded and will automatically open as soon as the **Head Latch** is disengaged. Remove the ribbon.
4. Apply isopropyl alcohol to a cotton swab.
5. The **Print Head** faces downward along the front edge of the assembly. Pass the end of the dampened swab along the entire width of the **Print Head** (you may need to move the ribbon out of the way to do this).



6. Check for any black coloring or adhesive on the swab after cleaning.
7. Repeat if necessary until the swab is clean after it is passed over the head.
8. The head should be cleaned at least every time the ribbon is changed and more often in harsh environments.
9. Apply isopropyl alcohol to one of the cotton swabs.
10. The **Platen** is the rubber roller directly below the **Print Head**. It should be cleaned of any ribbon or label residue.

Cleaning the Rollers and Guides



1. The **Label Load Drive** is located underneath the **Label Hold-Down**. It should be cleaned of any label residue or foreign material. The **Label Hold Down Roller** is located on the underneath side of the **Label Hold Down**. It should also be cleaned of any residue or foreign material.

2. There are two **Label Edge Guides** used in guiding the labels through the printer. They should be cleaned of any residue or foreign material.

3. Repeat when necessary. The rollers and guides should be cleaned whenever foreign matter such as dust or adhesive is present.

CLEANING THE SENSORS

There are two sensors that are used to control the positioning of the label. One is a transmissive see-thru sensor that detects the edge of the label by looking through the liner which is translucent and detecting the presence of the opaque label. The other is a reflective sensor that detects the light reflected from the bottom of the label liner. When a printed black Eye-Mark passes through the beam, the light is no longer reflected back to the sensor detector, indicating to the printer that it should use this position as the start of a new label. When dust, dirt or other foreign matter interferes with the light path of either of these sensors, the results is erratic label positioning. These sensors should be cleaned regularly, at least every two rolls of labels. They are both located on an adjustable assembly in the throat of the printer between the **Label Hold Down** and the **Print Head**.

1. Turn the printer OFF and remove the power cable.

2. Open the **Top Access** and **Side Access** doors.

3. Open the **Print Head** by pushing the **Head Latch** toward the rear of the printer. The **Print Head** is spring-loaded and will automatically open as soon as the **Head Latch** is disengaged. Remove the ribbon.

4. Apply isopropyl alcohol to a cotton swab.

5. Carefully insert the swab between the top and bottom portions of the **Sensor Assembly**. The location of the sensors is identified by two marks on the front of the assembly.

6. Move the swab back and forth to clean any residue from the sensors (see page 20 for location of sensors).

REPLACING THE PRINT HEAD

The print head on the PTR3E printer is a user-replaceable item. If it becomes damaged for any reason, it can be easily removed and replaced. Contact Technical Support for information on obtaining a new print head.

Supplies needed: No. 2 Phillips screwdriver (a magnetic tip is helpful), Replacement Print Head (available through Panduit Printer Repair Department)

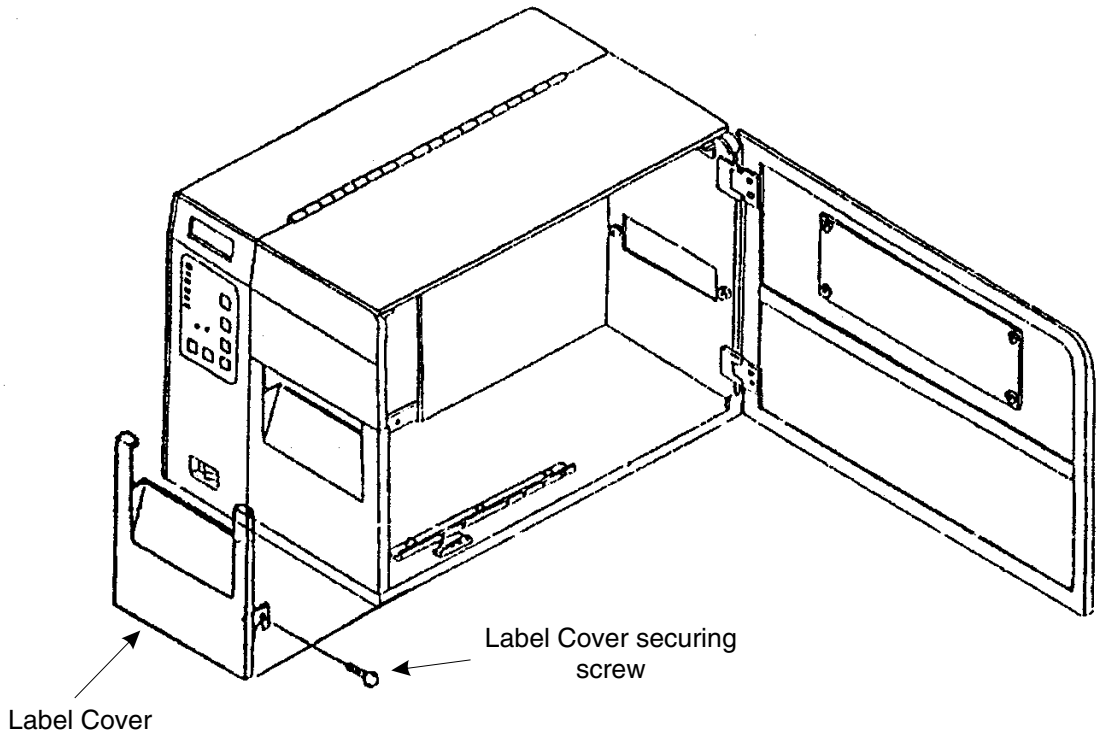
1. Turn the printer OFF and remove the power cable.

2. Open the **Top and Side Access** doors.

3. Open the **Print Head** by pushing the **Head Latch** toward the rear of the printer. The **Print Head** is spring-loaded and will automatically open as soon as the **Head Latch** is disengaged.

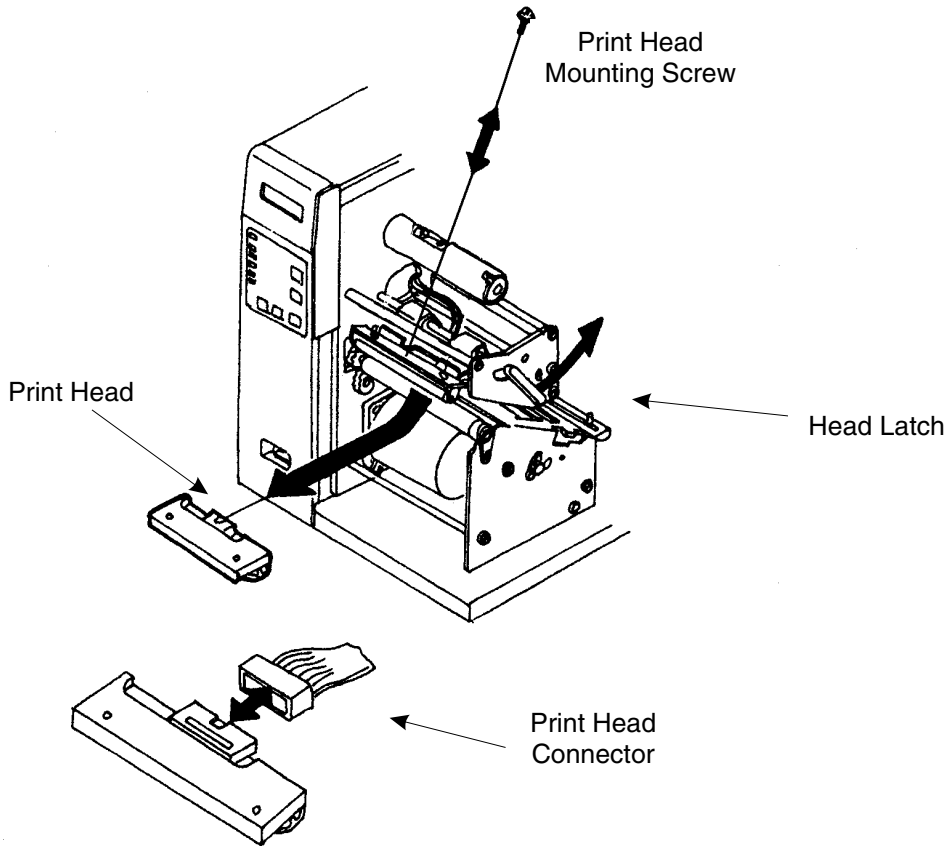
4. Remove the ribbon from the **Ribbon Rewind Spindle** if necessary.

5. Remove the **Label Cover Assembly** by removing the securing screw from the assembly.



6. View the **Print Head** from the front of the printer. Locate the center mounting screw on the top of the assembly. Unscrew this screw and set it aside.

7. The **Print Head** should now be loosened from the top of the assembly by grasping either side and carefully pulling it down.



8. Disconnect the signal and power cables from the print head connectors and set the **Print Head** aside.

DO NOT *remove the two outside screws (painted red) on either side of the center mounting screw. The Print Head is pre-aligned and if these screws are loosened, it will have to be re-aligned for proper print quality.*

9. Carefully attach the new print head to the connectors, using caution to make sure the connector keys are correctly positioned.

NOTE: Be careful not to scratch the printing surface of the print head while installing it. Scratching the surface will cause permanent and irreparable damage and is not covered by the warranty!

10. Locate the mounting screw in the top plate assembly and align it with the tapped hole in the new print head.

11. Re-secure the print head by tightening the screw.

REPLACING THE FUSE

Supplies needed: 250V 3A Fuse

1. Turn the printer power OFF and remove the power cable.
2. On the back of the printer, locate the **Fuse Cap** on the right-hand side of the AC connector.
3. Unscrew the cap and remove the defective fuse.
4. Replace with a new 250V 3A fuse.
5. Screw the cap back onto the printer and replace the power cord.

SECTION 5.
INTERFACE SPECIFICATIONS

INTERFACE TYPES

The parallel interface for the PTR3E printer is a high speed, bi-directional interface that conforms to the IEEE1284 specification (ECP mode on some computers). The interface is also compatible with the older Centronics parallel interface standard. If it does not detect the correct IEEE1284 signals I the interface connection, it will automatically operate in the standard Centronics mode which is much slower. To use the IEEE1284 parallel interface to its fullest capability requires that the host also have an IEEE1284 compatible interface and that the two be connected with a cable that meets the IEEE1284 specification. If either of these two are not present, the data rate is severely compromised.

In order to provide flexibility in communicating with a variety of host computer systems all "e" printers use a Plug-In Interface Module. The IEEE1284 Interface module is shipped with the printer unless another interface type is specified at the time of the order. A serial interface at a high speed to 57.6k bps is also available.

The Parallel interface will probably be the most useful in communicating with IBM purchase and compatibles. The RS232C Serial interface allows connectivity to a number of other hosts.

WARNING: Never connect or disconnect interface cables (or use a switch box) with power applied to either the host or the printer. This may cause damage to the interface circuitry in the printer/host and is not covered by warranty.

IEEE1284 PARALLEL INTERFACE

The parallel interface for the PTR3E printer is a Plug-In Interface Module that can be installed by the user. It conforms to the IEEE1284 specification. It will automatically detect the IEEE1284 signals and operate in the high speed mode. If it does not detect the IEEE1284 signals, it will operate in the standard Centronics mode, which is significantly slower. *For this reason, an interface cable and host interface conforming to the IEEE1284 specification must be present to fully utilize the speed capabilities.* This interface also operates bi-directionally and can report the status of the printer back to the host.

ELECTRICAL SPECIFICATIONS

Printer Connector	AMP 57-40360 (DDK) or equivalent
Cable Connector	AMP 57-30360 (DDK) or equivalent
Cable	IEEE1284 Parallel, 10 ft. (3 m) or less
Signal Level	High = +2.4V to +5.0V Low = 0V to -0.4V

RS232C SERIAL INTERFACE

The High Speed Serial Interface is a Plug-In Interface Module. The PTR3E comes standard with parallel interface.

GENERAL SPECIFICATIONS

Asynchronous ASCII

Half-duplex communication

Ready/Busy Hardware Flow Control
Pin 20, DTR Control
Pin 4, RTS Error Condition

X-On/X-Off Software Flow Control

Bi-Directional Communication (ENQ/Response)

Data Transmission Rate

2400, 4800, 9600 and 19200 bps

Character Format

1 Start Bit (fixed)
7 or 8 data bits (selectable)
Odd, Even or No Parity (selectable)
1 or 2 Stop bits (selectable)

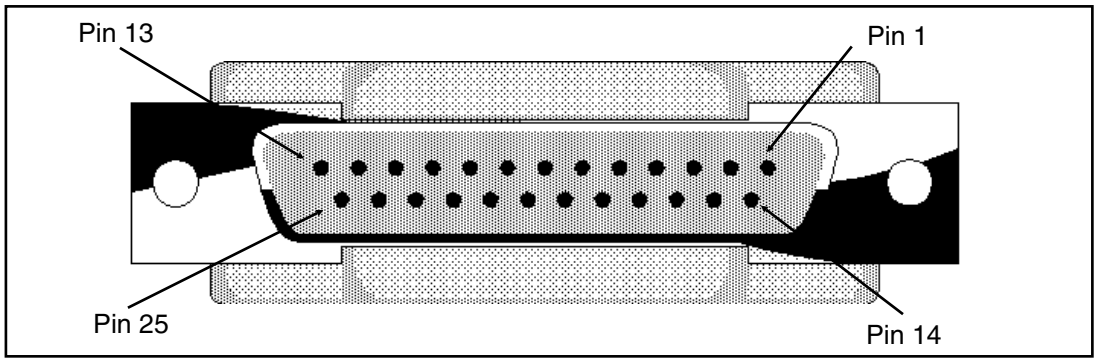
ELECTRICAL SPECIFICATIONS

Connector

DB-25S (Female)

Cable

DB-25P (Male), 50 ft. maximum length. For cable configuration, refer to Cable Requirements appropriate to the RS232C protocol chosen.



Signal Levels

High = +5V to +12V
Low = -5V to -12V

SECTION 6.
TROUBLESHOOTING

This section has been compiled to help you produce output on the PTR3E. Use this section to make sure the basics have been checked before deciding you are unable to proceed any further. The section is divided into four parts:

- Initial Checklist
- IEEE1284 Parallel Interface
- RS232C Serial Interface
- Error Signals

INITIAL CHECKLIST

1. Is the printer powered up and On-Line?

2. Is the ERROR light on the front panel off? If this light is on, it may mean the Print Head Assembly or the Label Hold-Down is not closed and latched in position.

3. Are the LABEL and RIBBON lights on the front panel off? If these lights are on, the labels or ribbons may be incorrectly loaded.

USING THE IEEE1284 (PARALLEL) INTERFACE

1. Is the IEEE1284 parallel printer cable connected securely to your parallel port (DB-25S Female) on the PC and to the IEEE1284 connector on the printer?

   WARNING: Never connect or disconnect interface cables (or use a switch box) with power applied to either the printer or the host. This may cause damage to the interface circuitry and is not covered by warranty.

2 Does the Parallel interface cable used meet IEEE1284 specifications? If it does not and you are connected to an IEEE1284 or ECP parallel port on the computer, the printer may not be able to communicate correctly.

3. Is there more than one parallel interface port on your PC (LPT1, LPT2, etc.)? If so, make sure you are sending data out the correct port.

4. Is the IEEE1284 Interface Module installed in the printer? The PTR3E requires the new IEEE1284 Parallel Interface (PN WCL40470) to take advantage of the faster data transmission speeds. The older Parallel Interface Modules will work, but at a reduced capability.

5. When you send the print job to th eprinter, and it does not respond, do you get an error message on your PC that says "Device Fault" or something similar?

   This may mean that the computer doesn't know the printer is there. Verify that:

   a. Both ends of the cable are securely inserted into their respective connectors.

   b. The printer is On-Line.

   c. The cable is not defective.

USING THE RS232C (SERIAL) INTERFACE

1. Is the RS232C Serial cable connected securely to your serial port on the PC (DB- 25S Male) and to the RS232C connector on the printer?

   WARNING: Never connect or disconnect interface cables (or use a switch box) with power applied to either the printer or the host. This may cause damage to the interface circuitry and is not covered by warranty.

2. Is the cable defective? You should be using a "Null Modem Cable," which crosses pins in a specific manner. This enables your printer to print. We recommend that you use a cable built to specifications as described in Section 5: Interface Specifications.

3. Is the RS232 Interface Module installed in the printer? The PTR3E requires the new Hi Speed Serial Interface (PN WCL40451) to take advantage of the transmission speeds. The older Interface Modules will work, but at a reduced capability.

4. If after sending your job to the printer, it only "beeps" (or displays a Framing Error message on the LCD panel) indicating a "framing error" message, you may have a configuration problem. There may be some inconsistencies with the Baud Rate, Parity, Data Bits, or Stop Bits in relation to your host computer. If you are confused as to what the printer's current RS232 settings are, you may choose the Panduit defaults (all DIP switches in the OFF position) to achieve 9600 baud, no parity, 8 databits, and 1 stop bit.

ERROR SIGNALS

LED	LCD MESSAGE	AUDIBLE BEEP	ERROR CONDITION	TO CLEAR
Error On	Machine Error	1 Long	Machine Error	Cycle power on/off
Error On	EEPROM Error	1 Long	EEPROM Read/Write	Cycle power on/off
Error On	Head Error	1 Long	Head	Cycle power on/off
Error On	Sensor Error	3 Short	Sensor	Cycle power on/off
Error Blinks	Card R/W Error	1 Long	Memory Card Read/Write	Cycle power on/off
Error Blinks	Card Low Battery	1 Long	Memory Card Battery Low	Cycle power on/off
Error Blinks	Head Open	3 Short	Head Open	Close head lever
Error Blinks	Cutter Error	3 Short	Cutter	Cycle power on/off
Error On Line Blinks	PARITY ERROR	3 Short	RS232 Parity Error	Cycle power on/off
Error On Line Blinks	Overrun Error	3 Short	RS232 Overrun Error	Cycle power on/off
Error On Line Blinks	Framing Error	3 Short	RS232 Framing Error	Cycle power on/off
Error On Line Blinks	Buffer Over	3 Short	Buffer Overflow	Cycle power on/off
Error Blinks Label On	Paper End	3 Short	Label End	Open/close Head Lever Open/close Label Hold-down
Error Blinks Ribbon On	Ribbon End	3 Short	Ribbon End	Open/close Head Lever Open/close Label Hold-down
Error Blinks Label Blinks	Media Error	3 Short	Media Error	Open/close Head Lever
Ribbon Blinks		None	Ribbon Near End	Replace ribbon with full roll
Line Blinks		None	Buffer Near Full	Slow down transmission rate